

Seminar in Microbiology

Monday, October 12, 2015

Salle de séminaire 7172, CMU

11:30 – 12:30



Dr. Olivier NEYROLLES

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Host-pathogen interactions in tuberculosis

Dr. Neyrolles studies various aspects of the microbiology and cell biology of mycobacterial infections. *Mycobacterium tuberculosis* is a facultative intracellular pathogen that thrives inside host macrophages. A key trait of *M. tuberculosis* is to exploit and manipulate nutrient trafficking inside infected macrophages to ensure survival and replication inside the phagosome. Here, Dr. Neyrolles will discuss recent discoveries about transition metal and amino acid exploitation in the arms race between *M. tuberculosis* and the immune system, and how targeted approaches might complement existing TB chemotherapeutic regimens with novel anti-infective therapies.

Selected Publications

- Gouzy A, Poquet Y, Neyrolles O. Nitrogen metabolism in *Mycobacterium tuberculosis* physiology and virulence. **Nat Rev Microbiol.** 2014 12(11):729-37
- Gouzy A, Larrouy-Maumus G, Bottai D, Levillain F, Dumas A, Wallach JB, Caire-Brandli I, de Chastellier C, Wu TD, Poincloux R, Brosch R, Guerquin-Kern JL, Schnappinger D, Sório de Carvalho LP, Poquet Y, Neyrolles O. *Mycobacterium tuberculosis* exploits asparagine to assimilate nitrogen and resist acid stress during infection. **PLoS Pathog.** 2014 10(2):e1003928
- Gouzy A, Larrouy-Maumus G, Wu TD, Peixoto A, Levillain F, Lugo-Villarino G, Guerquin-Kern JL, de Carvalho LP, Poquet Y, Neyrolles O. *Mycobacterium tuberculosis* nitrogen assimilation and host colonization require aspartate. **Nat Chem Biol.** 2013 9(11):674-6
- Botella H, Stadthagen G, Lugo-Villarino G, de Chastellier C, Neyrolles O. Metallobiology of host-pathogen interactions: an intoxicating new insight. **Trends Microbiol.** 2012 20(3):106-12
- Botella H, Peyron P, Levillain F, Poincloux R, Poquet Y, Brandli I, Wang C, Tailleux L, Tilleul S, Charrière GM, Waddell SJ, Foti M, Lugo-Villarino G, Gao Q, Maridonneau-Parini I, Butcher PD, Castagnoli PR, Gicquel B, de Chastellier C, Neyrolles O. Mycobacterial p(1)-type ATPases mediate resistance to zinc poisoning in human macrophages. **Cell Host Microbe.** 2011 10(3):248-59